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HEALTH

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INDIA'S HEALTH PROBLEM

"If I asked you to look into your lives and to say honestly what you consider is the most precious gift that Fortune could bestow upon you, I feel sure that the vast majority of thinking people would declare it to be good health. By good health I do not mean the mere absence of sickness or disease but a state of positive physical well-being in which a man's mind and body function harmoniously, vigorously and to the utmost of their capacity, thus enabling him to enjoy the best that is in life and to reach the maximum level of effort and production of which he is capable."

Sir Joseph Bhore, Chairman, Health Survey and Development Committee, made the above observations in the talk he broadcast the other day. Earlier at a meeting he declared: "The health of the nation is the foundation on which the entire superstructure of all its development and progress, social, intellectual, moral and material (and we shall add, political—Ed.) depends and that the plans for reconstruction in other spheres now being considered will be infructuous or yield an attenuated harvest of results unless the reconstruction is based on the foundations of strong, healthy and virile people."

The Chairman of the Committee is not unaware of the position that exists in the country at the present day. "The expectation of life calculated over the period 1920-30 for British India in the case of males was just under 27 years as against 65 in New Zealand, 63 in Australia, 59 in U. S. A. and 58 in England and Wales. Or, take again the question of infantile mortality. The rate for this in 1937 was 31 in New Zealand, 38 in Australia, 54 in U. S. A., 58 in England and Wales and *no less than 162 in British India.*" Reference to more mortality and sickness figures appeared probably sickening to him, because they are far too depressing. But he cannot but quote the opinion expressed by Col. Sinton in his *Health Bulletin No. 26*. Says the gallant Colonel: "Malaria gives rise to the greatest economic problem with which India is faced. The financial losses to the individual and the family alone have been calculated at no less than Rs. 11,000 lakhs *annually* or about 80 million sterling, per annum." The figures of losses due to other diseases must be staggering indeed.

What are the causes that contribute to this staggering state of things and the colossal loss to the nation? The

RIGHT HONOURABLE and gallant Secretary of State for India, MR. LEOPALD AMERY, who never misses any opportunity to lecture to the world on the benefits conferred by British rule to India and who ventured on the same theme the other day even when the subject under discussion in the House of Commons was none too creditable for the British Raj, had perforce to admit in the same speech that "the vast majority of the population of India have always been and still are subsistence cultivators. They wring a meagre and precarious existence from their small holdings and only need for finding a litle ready money for rent, for payment of debts, and for purchase of very minimum of necessities and petty luxuries, leads them to sell such narrow margin of surplus food as they can manage somehow or other, to do without." His statement that fifty million small ryots have at least a narrow and fluctuating margin of surplus is all moonshine. We have pointed out in a previous article that a very large majority of these ryots are people who own an acre or less of land, the yield from which is hardly sufficient to keep them and their families above want, with primitive methods of agriculture still in vogue. The result is, as SIR AZIZUL HUQ has pointed out, "the annual production of rice per head in Bengal had gone down over the last 30 years from 384 lbs. to 283 lbs" MR. AMERY improved upon this by candidly admitting that production of foodstuffs per head in India as a whole has declined in 30 years by more than a quarter. Outside the permanently settled areas where the ryotwari system is in force, the ryots are groaning under a heavy burden of taxation, thanks to periodical settlements and the half-net theory now in force. We have also to take into consideration another aspect of the problem, the loss of nutritive value in even the decreased quantity of foodstuffs now produced, due to the depletion of the necessary vitaminising ingredients in the soil. This is the state of things in India after 170 years and more of British rule!

In a country where tens of millions are underfed, tens of thousands are dying of starvation, and hundreds of thousands are down with this, that or other ailment, incapacitating them from attending to their work to earn their daily bread and causing a huge loss of man power to the nation, it is not going to be an easy task for SIR JOSEPH BHORE and his Committee to get at the root of the problem and recommend suitable measures to remedy a state of affairs which has been allowed to deteriorate with years by utter indifference and neglect. SIR JOSEPH is cognisant of the stupendous nature of the task that awaits his Committee. He feels his Committee can hope to accomplish its task with some measure of success only if co-operation is given to them without stint and without measure by all who have the good of the country at heart. This, in his words, is the great nation-building task before the country to-day. He can have that co-operation in the fullest measure without stint from any quarter But will his Committee be able to produce results?

SIR JOGENDRA SINGH, Member for Public Health, Education and Lands, assures us "that before the year 1944 ends, he will give the country a programme of agricultural development which would aim at providing nourishing food for all, a programme of health and housing aiming at equipping our whole population with knowledge." He is correct in saying that "if our people are physically fit and mentally alert, there is nothing that can prevent their taking their proper place in the comity of nations, if political and economical integrity of the country is maintained." There are too many big "ifs" in this assurance. Let us leave them aside for the moment. But his programme is far too ambitious, isn't it? Even if the Bhore Committee, like Aladdin's lamp, draw up a comprehensive scheme of health reform, will SIR JOGENDRA, with all the limitations attaching to himself, to the high office he holds and to the restrictions on the powers of the Central Government under the Government of India Act of 1935, be able to put through such an all-embracing scheme of reform which would cost many, many crores?

Our readers are aware that according to the Constitution Act now in force in this country, Public Health, Medical Relief and allied departments are entirely under provincial control. May

be, SIR JOGENDRA believes he can issue *Fatwas* to Provincial Governments to give effect to Bhore Committee's recommendations when they are made, and salve his conscience with having done a great and good job. Is it at all possible to do so when, even while thousands are dying of starvation in the streets of the second great city in the Empire, MR. AMERY pleads inability to interfere in the provincial field? Even assuming it is possible to do so, thanks to the new realisation that the Central Government should be all-powerful and is all-powerful, will the Provincial Governments which have been left with inelastic sources of revenue and increasing expenditure bills, be able to find the tin to push through such far-reaching and comprehensive scheme of reforms? The labours of the Committee will go in vain, as the labours of many other Commissions and Committees had gone before, unless the Government of India who have elastic sources of revenue at their command, commit themselves in advance to the large expenditure involved in putting through such a scheme of reform, or agree to transfer some of the elastic sources of revenue to the Provinces to meet this, that and other bills. This is essential even for obtaining that full measure of co-operation from the public which SIR JOSEPH BHORE asks for. Will SIR JOGENDRA induce the Government of India of which he is a member which, in the words of MR. ANTHONY, M.L.A. (Central), "had overfed and mentally famished people at the top and underfed and morally famished people at the bottom," to make a declaration in this matter, or force them to build up a large reserve now that financial conditions are favourable? On his answer depends the success of the work of the Committee and the fruition of his ambitions.

Since writing the above, the HON. MR. P. N. SAPRU initiated a debate in the Council of State on a resolution recommending the building up of a reconstruction fund for educational expansion and public health improvement in India. THE FINANCE SECRETARY in replying to the debate stated that "the finances of the country, strained as they were, would not permit the building up of any large funds which would be required for these purposes," but wanted the House to rest assured that *as soon as conditions permitted* (Italics are ours—ED.) Government would put their schemes into operation in the shortest time possible. The resolution was amended in the manner suggested by the FINANCE SECRETARY and passed by the House. The strain on the financial resources of the Government is bound to be far greater after the War than it is at the present moment, and the acceptance of this watered-down resolution only confirms our suspicions. Is this the way in which a very important and huge problem can be tackled? We are afraid the Report of the Bhore Committee will fare no better than the reports of many other Commissions and Committees that have preceded it. The less said about it the better.

A Day of Your Life

(S B. Whitehead)

If you are an adult weighing about 12 stone, in 24 hours:

Your heart beats ...	103,680 times
Your blood travels ...	168,000,000 miles
You breathe ...	23,040 times
You inhale ...	438 c. ft. of air
You eat ...	3½ lb. of food
You drink ...	2·9 pints of liquid
You lose in weight ...	7·8 lb of waste
You perspire ...	1·43 pints
You give off in heat ...	85·6° F.
You generate in energy ...	450 foot-tons
You turn in sleep ...	25-35 times
You speak ...	4,800 words
You move ...	750 major muscles
Your nails grow ...	·000046 in
Your hair grows ...	·01714 in.
You exercise ...	7,000,000 brain cells

PERSONAL HYGIENE

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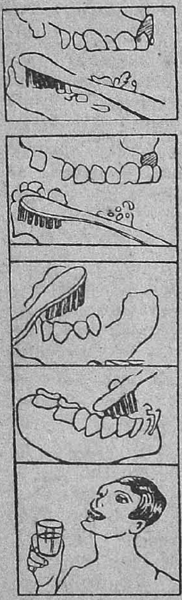
THE health of an individual depends on his daily practices, food, mental cleanliness, exercise, dress, etc. A few advisory points as to how one should keep himself fit to be a healthy man, mainly intended for the growing population, is given here.

Clean teeth are vital to health.

I. **Mouth and Teeth.**—Just as we keep our skin clean the mouth and teeth have got to be scrupulously kept clean. To facilitate this, teeth cleaning is advised at least twice a day, once in the morning as soon as one gets up and again before going to bed at night. Food particles may get stuck up between the crevices of the teeth and may decay and produce a disease called "Pyorrhœa Alveolaris." The mouth of a person with such a disease will eminate very unpleasant odour when he speaks to his friends and he may not be welcomed in company. This decayed food later gets converted into pus and if this is swallowed may produce stomach troubles. Such people may have to get their teeth extracted and substitute artificial teeth. Of course, I need not say, that tooth-ache is a painful symptom. The tongue should be scraped clean and the mouth gargled well during teeth cleaning. In our country people use margosa sticks for cleaning the teeth. This seems to be a good habit. There are also many tooth powders in the market. Sand, mud and brick-powder should never be used for cleaning the teeth as they spoil the enamel of the tooth. The best of the tooth powders is charcoal powder with a little salt. Now-a-days people also use tooth brushes sold in the market. As soon as these are used they should be washed in hot water, wiped dry and kept in a glass bottle as shown in the figure. (2) Either with brush or neem stick the teeth should be cleaned with up and down motion, taking care to see that the interior of both the rows of teeth also get cleaned. (3) The cleaner the teeth the better is the digestion. (4) The nails should always be cut short taking care to see that no dirt accumulates in them. They should never be bitten. (5) The head should be oiled and combed daily. Better to wash the head once in a week with soap to get rid of the grease. (6) Every man should practise self-shaving. The barber's razor is likely to contain infection of skin diseases like itches, ring-worm and may inoculate the causative organism during the process of shaving.



Begin with touching the gums

Move the brush up and down

Clean inside of the tooth

Clean inside front tooth

Gargle well

How to preserve a tooth brush

Don't bite the nail

Self-shaving is good

II. **Cleanliness of the Body.**—The main basis of hygiene is cleanliness. The food we eat, the air we breathe, the water we drink and the house we live in, should always be clean.

1. *The Bath*:—Bathing at least twice a day is desirable in tropical countries. Special attention is to be paid to the arm pits and private parts and they should be cleaned well with soap or soap nut powder during the bath. Cold

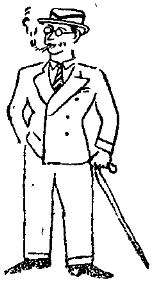
Take daily bath.

water is preferable in the case of young energetic persons as it has a tonic effect. But in the case of very young, old, convalescent and weak people, warm water is advised. Oil bath once in a week brings down the heat of the body, lubricates the various joints and cleans and softens the skin.

2. *Food*:—Like other animals of the universe man requires food every day. One should wait till he is hungry and eat what he likes most, consisting of proteins, carbohydrates, fats, salts and vitamins. The food should be masticated well so that it becomes semi-solid and glides through the food tube. Limited food should be taken and over-eating avoided. The night meal should be light. The custom of persons of one family eating in a single plate or leaf is objectionable. Each one should have a separate plate or leaf.

Eating in common leaf is bad

3. *The Dress*:—The dress is worn to protect us from wind, weather, heat and cold and also for beauty. In hot countries the dress should be capable of absorbing sweat. Tightening of dress hinders blood circulation, respiration, digestion, muscular growth and free movement.

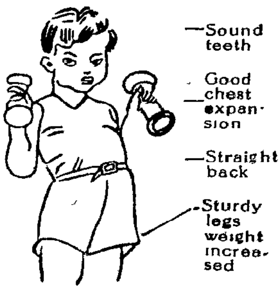


Dress unsuited to tropics

Tight garters to keep the socks in position may bring about varicose veins. Foot wear is an important item of dress and may consist of slippers or boots. It prevents you from treading upon filth, or injury from the tropical heat of the sun, and last but not the least from hook-worm disease

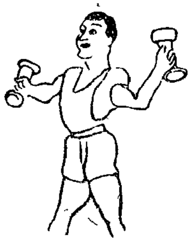
Better dress for tropics

4 *Exercise*:—Exercise ought to be the daily duty of every man and boy. Exercise strengthens the heart, facilitates muscular growth, equalises the temperature of the body, increases sweat and diminishes the quantity of urine. It gives rest to the tired nerves and brain and produces joy in the individual. It also prevents constipation. Breathing (*pranayamam*) gives good exercise to the internal organs of the body and should be practised.



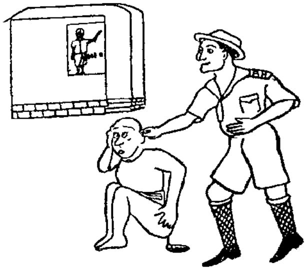
Exercise

5. *Sleep*:—Too much of sleep makes one drowsy and dull, and sleeplessness results in mental weakness. One should sleep according to his age. Infants should sleep a longer time. Young persons should not sleep immediately after a meal. Remember the proverb "After dinner rest a while, after supper walk a mile." One should not bury his face in a soft pillow. The sleeping room should be wide and should permit the free flow of air. In hot countries a short nap is good during the hottest part of the day. "Early to bed and early to rise" should be the motto.



6. *The residence* should be kept neat and tidy without any rubbish anywhere. Care should be taken to see that there are no stagnations all round so as to mitigate fly and mosquito nuisance. Every house should have a latrine which should be properly used by the residents. Indiscriminate defecation and pollution of water sources constitute the worst harms that one can do to society.

Go to latrine and prevent disease



Don't defecate on: 1. Road Margins; 2. Tank buds; 3. River sides

7 *Mental Hygiene*:—'A clean mind in a clean body' is the saying. One should not give room to bad thoughts, joylessness, theft, tricks and undesirable friendship or company.

THE SLUMS

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(Continued from page 194, Nov. '43.)

ALL over the world, whether in the East or in the West, slums are found but conditions differ according to the climatic, social and economic conditions. Appalling poverty of the masses, the high cost of land and inflation of house rents and land values, lack of funds available from State revenue, vested interests, heavy compensation, unwillingness to extra taxation, hostility, too many individual ownership, inadequate legislation and technical control and a host of other difficulties are the real causes Slums are noticeable in most big cities like London, New York, Berlin, Bombay and Calcutta and these areas have proved to be the major problems during wars.

Housing shortage, economic and social forces, deficient housing, etc., have led to slums. Inability of the lowest wage-earner to pay economic rent, high cost of materials, building industry's neglect of town planning and irregular development of towns have also helped to produce unhealthy areas and to increase the strain on traffic problems and public utility services in their operation and maintenance.

Some of these factors assume predominance according to the time and place. The lack of men, materials and transport were the chief causes for the high cost of building immediately after the last Great War. A cottage costing £ 150 to £ 300 before the war costed £ 500 to £ 1,150 after the war The cost of production after the war in all fields of activity was abnormal and furthermore the building power absorbed by the factory owners, in industrial repairs and reconstruction, greatly enhanced the cost of domestic buildings generally. It was also hardly possible to attend to normal repairs with the high cost of labour and materials Increased building programmes tended to the increased cost of building materials.

The breakage of family life on a large scale also helps to develop slums. Nearly a million men lost their lives in the last Great War and this involved breaking up of homes. The demand for houses increased faster than the rate of increase in the population. The suspension of emigration during the war further aggravated the demand for houses as also the return of the already emigrated, and the rural population who came to urban areas showed no inclination to return to rural parts even if they were unemployed in urban areas. The actual shortage created by the suspension of building activity between 1914-1918 was not less than 350,000 houses. In the period 1918-1924 the need for not less than 500,000 was created, whereas only 300,000 were built during the time.

The unit of housing is not the individual but the family. In recent years, owing to a diminution in the size of the average family, the number of separate families in the country has increased out of proportion to the increase in population. In England marriages in 1919-20 reached the unprecedented number of over a million. A study of statistics showed that 100 marriages created the need for about 33 new homes, the remaining 67 being counterbalanced by the breaking up of families owing to deaths.

As a consequence of the increase in the demand for homes, big houses are converted into several small tenements. In the middle zone of London, for instance, houses originally intended for families were used as tenements without any alterations, structural and sanitary. Frequently these houses get into a bad state of repair and the accommodation was insufficient, expensive and unsuitable. The State has to spend increasing amounts to alleviate the sufferings of the dwellers—their ailments and troubles.

The existence of slums is therefore to be greatly deplored as they are dangerous to the well-being of the community. Immense advantages would accrue to the nation, the people and the State if they are cleared. This is proved by several instances all over the world. According to the Head-Constable of Liverpool, demolition of insanitary slum property and rehousing of the tenants in sanitary and well-planned dwellings had a most beneficial effect as regards the sobriety, good conduct and good citizenship in that area. Alderman Harford of Liverpool confirmed that prior to demolition in 1874 offences which amounted to 202 per annum fell to 84 in 1904, ten years after rebuilding and to 4 in 1912.

Liverpool example further disproves the contention that people who have lived in insanitary houses and under conditions of overcrowding will not respond to higher standard of living encouraged by new houses, but will speedily reduce their new homes to the disgraceful state of the old. The dispossessed tenants in Liverpool were rehoused on the same site in corporation dwellings with improvement, moral and physical and a general raising of the standard. In one district, for the same people rehoused after clearance, both the general and tuberculosis death rates were reduced by half. It is estimated that the reduction in the number of slums from 1510 to 323 saved for the municipality £ 3,000 per annum, spent normally for cleaning and sanitary administration alone.

Slum clearance schemes are therefore in operation in different parts of the world. Clearing up and reconstruction of street

systems is the most interesting feature of Continental slum clearance, which provided broad roads, ample water supply, good drainage, and good number of open spaces. In Paris, Baron Haussman, appointed and supported by Napoleon III, cleared away over-crowded and large slum properties and laid out parks, open spaces, boulevards and pleasure grounds by the hundreds between 1851 and 1871, the cost of improvements in Paris alone exceeding 48 million pounds.

A great improvement scheme was initiated in Vienna by the Emperor about the same period when fortifications were pulled down and a fine circular road from which other wide roads radiated in all directions were laid. Houses were built on the surplus lands provided thus and exemptions were given to those who built houses within 5 years from taxation to encourage development on systematic lines.

Experience of slum clearance teaches us that the problem is inter-related with housing, and to solve the problem successfully, slum clearance should not be undertaken till other accommodation has been provided for the slum dweller. One difficulty is, the inhabitants displaced sometimes refuse to be moved. On the other hand, if the move is considered only temporary and that the original inhabitants should return when new buildings have been constructed on the old sites, the same number of people displaced cannot be housed in old areas, because a lesser density of population is only allowed in such areas. Huge block dwellings could be built to rehouse the displaced in the same area but in addition to the serious objections to block dwellings usually repeated by housing reformers, the original inhabitants dislike them because they loose gardens and they dislike climbing up flights of stairs, several times during a day.

Huge blocks do not solve the problem; they give rise to greater ones. Speculative builders, as demand for housing increeased, built huge blocks of dwellings where slums were cleared. The sole object of the speculative builder was to make profit without regard to health and comfort. Small houses are pulled down and they are replaced by huge blocks of dwellings or hotels. The displaced are not provided elsewhere, intensifying house shortage, increasing overcrowding and increasing rents. Huge blocks of dwellings or flats, as they are called, are piled one over the other. Open spaces are not provided in proportion to the height of the building. High buildings with fine frontages but with little open ground behind, may appear magnificent from the roadway but they are not healthy for children, mothers and the aged. Poor health is the result.

Slums have actually been intensified by such a development. Instead of one or two storey dwellings, several storey structures take their place. Houses with gardens are pulled down and replaced by high blocks of flats or dwellings covering the whole ground. These blocks of piled dwellings hold much larger population than the houses they have displaced and in due course intensify the evils of slums.

The change to flats destroys the old idea of the home. Whatever reasons may be advanced in favour of the change, it is certainly a retrogression in housing. It is a device eminently fitted to frustrate the objects of the advocates respectively of garden cities, of satellite towns and slum reform.

Block dwellings are erected only too frequently, although there is a world-wide tendency on the part of the house reformers to urge their abandonment, in preference to self-contained cottages. Mr. Robert Hunter, Secretary to the Chicago Tenement House Commission, strongly condemned American Block Dwellings. According to him the sky scrapers and tall tenements are a creation of the devil and he can never see anything in them except a menace to the best family life and normal living among the people. He holds that everything possible should be done to prevent their growth.

Dr. Fuchs of Freiburg, the well-known German Housing Expert, expressed the general opinion of the International Housing Conference at Dusseldorf when he warmly approved the stand taken by England against the block system of dwellings which had produced such injurious effects in continental cities.

Vertical development to rehouse the slums is therefore not countenanced by experts and by experience, for this concentrates the population. Alternative to this is horizontal development *i.e.*, to build outside the towns. Wear and tear of travel, and exhaustion from journey in crowded carriages to and from business, impose a severe strain on travellers, and ever increasing volume of travellers aggravate the already serious traffic problem. Again central areas could be made only commercial and industrial if transport system could be reorganised for the flow of the population coming in and going out morning and evening every day. In London 5 million people are brought in and taken back home every day. As the population is tending to recede further and further from the centre, transport facilities are put to constantly heavier strain. Although the population of the centre as a whole decreases, the actual density of traffic increases.

Slum clearance by these methods do not succeed in rehousing the original population, which is dispersed during demolition and the new dwellings are usually tenanted by somewhat superior class. The main obstacle, therefore, to slum clearance on a large scale is seen to be the problem of shifting the population, in which are involved three questions. (1) probable loss of employment for the dispossessed; (2) increase in passenger traffic where already existing traffic facilities are inadequate; and (3) lack of other accommodation for the inhabitants displaced.

The ideal way of dealing with the question is dispersal of population and by preventing concentration by means of Garden Cities and the like and by legislation enforcing the density of population per acre. The Committee

on Unhealthy Areas which met in London after the last Great War considered the problems created by the existence of slums and came to the conclusion that slum conditions could not be cured without dealing radically with present concentration of industry in the hearts of towns and consequent overcrowding. They were for encouraging decentralisation so as to reduce the pressure for accommodation in central areas and for persuasion to move people away from existing towns to satellite towns which could provide the maximum of industrial efficiency and social welfare. The Report of the Unhealthy Areas Committee published in 1919 has pointed out that one million persons would have to move elsewhere, if all the districts in Greater London, with density of more than 200 persons per acre, were cleared and houses built to accommodate 100 persons per 20 houses to each acre.

The problems of communication and transport public utility services, open spaces and amenities could be dealt with regionally with a central authority and all others combined for the good of the whole. Sizes of towns must be restricted and further development should be outside the towns. Dormitory towns, satellite towns and garden cities, if built, would help decentralisation of population and industry. Traffic, public utility services, and amenities could be better controlled if limitations to size of towns and the density of population are strictly enforced.

To limit the number of houses to twelve per acre means a population of sixty or seventy per acre, which is the standard recognised by experts. In clearance schemes, even if we build 20 houses per acre, which is objected to by house reformers, the land cannot provide for more than 100 persons. This limitation of population per acre has to be compared with districts in London and other great cities, where density of population reaches a figure of over one thousand per acre in certain areas of limited size. Overcrowding of this nature can be dealt with only by tackling the causes of overcrowding *i.e.*, the concentration of industry in the centre of the great towns Only planned dispersal of population and industry over the country with long term programme, can achieve this effectively and prevent the creation of congested areas in districts where the population is dispersed

We will do well also to remember while embarking on slum clearance that demolition alone, without providing for the people to be displaced in advance, leads to difficulties. Sometimes it is found that new houses are built in an unsatisfactory manner and of unsuitable type, which would tend to promote and foster over-crowding, with such a rapid consequential deterioration of property as to gradually create new jerry-built slums, as dangerous to health as the old ones they replaced.

If people displaced are not specifically provided with any accommodation anywhere, they migrate to other districts in search of a place to live in, but when they are refused accommodation for one reason or other elsewhere, they are forced to approach already crowded areas, and cause additional overcrowding.

Wholesale clearance of slums needs legislative support and Special Acts. Demolition work could be carried out gradually, starting always from the centre and working out to the suburbs. Slum clearance and rehousing schemes must be worked out simultaneously. Sometimes it is found that if proper provision for rehousing the displaced people is not made, it again practically amounts to creating another slum. Displaced population must be provided with dwellings elsewhere. Care must be taken while solving a given problem so that a new one would not arise as the existing one is approaching its solution. Before the Great War, Hamburg demolished 2 large areas. After the Great War it was necessary to demolish 1120 dwellings holding 3900 persons. New houses were provided in outer areas. Berlin had to carry out large clearance schemes both before and after the war.

When the whole area has not become a slum, different procedure is necessary. Those properties—individual or group units—whether dilapidated or unfit for human habitation, should be put in good condition. To patch up the existing dilapidated houses would not be difficult but may be unsatisfactory, as without demolition and reconstruction of some portions of congested houses and roads, public utility services and open spaces, costing large sums, very few would get sufficient air and space, safety, convenience and comfort. When the question of improving an old and intensely developed area of a town arises and on financial grounds the whole cannot be demolished, replanned and reconstructed, the whole property must be made sanitary and safe to live in, until finances make it possible to deal with the whole scheme completely afresh Loans should be available for such works from local authorities at reasonable rates of interest, the capital to be recovered in monthly or yearly instalments spread over a long period. In some cases loans, interest free, should be given and free grants should also be made to deserving cases. There should be no cause to complain that relief generally given did not reach those who needed it very badly.

If we have to learn from lessons presented by Glasgow and Leeds, dilapidated dwellings capable of repair and adaptation should be put right. Badly built, tumble down old houses in the slums should be pulled down. Effecting necessary repairs and adding sanitary conveniences, the old and internally dilapidated houses should be radically renovated and converted into decent homes Dilapidated buildings, structurally sound but completely neglected and worn out in their internal fittings, wood-work and plaster work, the plumber work, over-run with vermin and encrusted with filth or laden with germs of tuberculosis and other infectious diseases, should be put right without delay. These defects from the air, light and ventilation point of view should be rectified so as to make the houses fit for habitation.

In many cases existing houses are so small, and additions would be so unsatisfactory that a better alternative is to convert two inadequate dwellings into one and build new dwellings to make up the deficiency in numbers resulting from this. All alterations must be given effect to without endangering the structures.

Leaking roofs, dampness through walls and floors and in addition probably structural defects, are sufficient to render a building quite unfit for human habitation. The existence of contaminated walls and floors overrun with vermin or from other causes and most forms of rot and decay in timber are infectious or contagious. Dampness and stagnant air are also very dangerous and must be treated first. When repairs to structures are made outside, alterations should be made in keeping with the surroundings as otherwise æsthetic qualities would be lost.

In case the site is an important one and is better suited to more productive business, it is advisable to buy the whole property and reconstruct it to suit that purpose. Interested selfish ownership by too many are hindrances to collective progress and we must get over these obstacles by State Aid and legislation. It is more practicable to carry out such schemes for they would pay within a reasonable duration by rapid development. Care, however, should be taken to avoid economic loss to individuals and families.

Where flats become inevitable, strict regulation and supervision are necessary to provide adequate open spaces, sufficient ventilation and light for every room, staircase and passage and enough open space on the ground floor for children, mothers and the aged. The extent of open space should be in correct proportion to the proposed number of flats or dwellings, the approximate number of occupants and the height of the structures. No additions should be allowed to be made once the plans are approved by the authorities. In a dwelling house ⅓ of the plot should be built over, while in business zones ⅝ of the plot may be allowed to be built over. No new factories must be permitted to be built in cities. Old ones must be gradually removed within certain definite period to places elsewhere. Sometimes houses are allowed to fall into a dilapidated state due to want of effective supervision and timely repair. Medical officers of health and engineers must see that houses are maintained in good repair and in healthy condition

Municipal bye-laws must be enforced very strictly in regard to the structural strength of buildings, space around buildings, the recognised minimum standards of air, light and ventilation, space permitted for each person or family or group of persons, cleanliness and tidiness of structures and fixtures, cleanliness of the occupants and their belongings, and adequacy and sufficiency of sanitary and water supply arrangements. To keep one area or structure clean and tidy is not possible unless the surrounding areas are also similarly maintained as also the density of population and the proportion of open space. In European countries in case of new housing schemes it is reckoned that they become slums within 25 to 30 years. In India such data isn't available but by wise control areas developed could be prevented from becoming slums and shedding their depressing effect on the inhabitants. Municipalities must maintain the staff whose only duty would be to inspect and report on conditions of such areas and keep the necessary plans up-to-date. If occupants or owners of such premises fail to comply with their orders, the authorities in the interest of health and safety should take charge of such properties and put them in order and recover such expenditure from the owners by monthly instalments.

Slum clearance could be done by the State with State finance, by Municipalities with municipal aid, by Improvement Trusts, Housing Trusts, Building Societies, Building Guilds, Public Utility Societies, Co operative Societies, Insurance Companies and individual and collective private enterprise. Insurance companies could cover the risk, if any, in such enterprises. Owners should provide 25% of the cost and the remaining 75% should be given to them as subsidy to be repaid in 15 to 30 years. Rent and some amount towards the capital, could be recovered monthly by the lending agency. The loan should bear minimum interest. Improvement Fund must be created to meet any emergency.

Unaided private enterprise is not always successful if slums are to be cleared up. Government must assume direct responsibility for remedying unhealthy condition in housing areas and their environment, if slum clearance should be expedited. Subsidies to local authorities are also necessary. Government grant sometimes extends to 50% of the total loss involved. Grant is given on the basis of per person removed from insanitary condition and rehoused in new dwellings, and ranging from £ 2-5-0 to £ 3-10-0 per person per year for 40 years in some parts of England. Slum property could be acquired by local authorities and betterment tax charged to recover the interest and capital invested on this account. Early in 1938, the British Government voted a sum of £ 108 millions, distributed over 40 years, for subsidising new homes for people displaced through slum clearance.

The financial aspect of slum clearance should be given very careful consideration, and alternative methods worked out to discover the most economic methods of investment. There were complaints not only in Paris, but in Milan, Rome, Naples and in big German cities that most of the clearance that was done at far greater expenditure than the cost of erection of new dwellings, which we should remember when we deal with slum problem in India.

The Manual on "Unfit Houses and Unhealthy Areas" under Act of 1890 and the Housing and Town Planning Act of 1909 in England, explain clearly how houses are to be put right. During 12 months in 1913 notices were served on 30,781 in towns and urban districts. In 1143 cases, landlords chose to close the houses; in 24,448 cases notices were complied with and the houses were put right by the landlords at their own cost. In 67 cases,

local authorities executed the repairs themselves and recovered the cost from the landlords.

Under Closing Order section 15 and section 17 of the Act of 1909, 36,526 were made fit for human habitation. Since the Great War, however, the shortage of alternative accommodation has paralysed action on these lines.

Legislative compulsion is shown by experience to be absolutely essential if we should tackle the slum problem successfully. In India no Act as such exists except the activities of the Improvement Trusts which fall too short of expectations. On the other hand, 19th century methods of Europe practised and operated in India, now in the 20th century, are quite out of date, discouraging and disappointing. It is therefore high time a Ministry of Public Health is established at the Centre with its agencies in Provinces to control and guide the policy of the clearance of slums, prevention of over-crowding, provision for the displaced and strong measures to meet the shortage of dwellings so as to secure healthy conditions in housing and health, for the welfare of the citizens.

In addition to legislation and slum clearance Acts of all India applicability, a vast amount of original research and survey is needed to approach the problem of slum clearance. What is the minimum standard of accommodation, ventilation, etc., that must be provided in the new homes? Where the slum dwellers have to be shifted? That they must be fit for human habitation imply, that a dwelling is free from dampness, satisfactorily lighted and ventilated, properly drained and provided with adequate sanitary conveniences, water supply, adequate washing accommodation, facilities for conveniently preparing, cooking and eating food, well ventilated stores, minimum standard of accommodation to maintain standard of health, decency and convenience. All this should be determined before additions and conversions are to be made to existing structures and before new ones are created. A special body of experts should be entrusted with this task of discovering the minimum standard.

The next important factor is the collection of data. National Housing Survey in England in 1936 and the Housing and Economic Survey in U.S.A. in 1934, the International Labour Office, the League of Nations, and the International Housing and Town Planning Congress have all made their invaluable contribution by the collection and publicity of statistics and by scientific analytical studies. Co-operative effort and comparative study would certainly accelerate the solution. In India such study and statistics are lacking. It is not known how the people sleep, wash, dress, cook, and eat, live and die. Those who are homeless are numerous, merely existing in clusters under conditions of excessive heat and cold, wind, rain and cyclone, while those who are housed are in tall blocks of apartments built back to back in which a large bulk of population is warehoused.

Systematic survey, sound analysis and study, correct statistics and a detailed report on existing conditions and plans regarding slums are also necessary to guage the extent of slum conditions and over-crowding as well as for preparing schemes of reform. Statistics as to cost of sites, costs of buildings, size of the buildings, rent, loan charges, working expenses, repayment of loans, repair and maintenance, rates and taxes, statistics as to acerage cleared, cost of clearance, persons displaced, persons rehoused, cost of sites, cost of rehousing are all necessary. Information and statistics of towns accommodating 50,000 and over must be prepared to determine the extent of over-crowding and slums and health and economic conditions of the slum dwellers and the condition of the property and inhabitants. Survey should include classes of people, block dwellings, apartment dwellings, flats, two storey houses, one storey houses, accommodation provided for each person and per family of 5, basic rents charged, types of houses, kind of construction of houses, bulk of plot built over, height of all buildings and the number of storeys in case of block dwellings, apartment dwellings and flats. Reports must accompany plans. Density of population per acre, population per sq. mile, prevalent diseases and epidemics, death rate and infant mortality; condition and provision of open spaces and condition of road systems and public utility services and amenities.

These must be accurate and upto date to devise ways and means to deal with slum clearance economically, wisely and efficiently. All our efforts, if carefully piloted and wisely directed in co-operation and co-ordination all round, would contribute greatly towards incalculable benefit to health, prosperity and security of citizens of to-morrow. To achieve scientific planning and control, thought, imagination foresight and quick decision are needed. It is high time we avoid and correct such costly errors and learn by mistakes and experience of others if we have to seek better humanity through better environment. Slums have become the easy targets of the world war in as much as they are breeding places of epidemics in time of peace. It was revealed by Mr. Earnest Brown, Minister of Health in Nov. 1942, that since the outbreak of war just over 2,750,000 houses in England and Wales had been damaged by bombs. He also stated that the figures represented about one house damaged out of every five, in the country. If we have to clear them up sometime, why not now, even in face of whatever their clearance may cost, to ensure peace, safety and security under the conditions of war and peace.

Although India is predominantly rural, in her cities could be found large masses of people living in a deplorable state. Such over-crowding in the large cities like Bombay and Calcutta is gradually spreading all over India and bad quality houses present conditions of darkness, bad air, damp, dirt and dilapidation, unsightliness and odour and disorganisation in public utility services leading to slums.

It is high time that de-centralisation of population and industry is considered in right earnest so as to prevent further deterioration and the creation of over-crowding,

slums and confusion. Great changes have been brought about by the world war. In India, it has given birth to numerous new industries and expanded the ones already existing. It is upto Government, the financiers and economists, planners and sociologists, to take notice of this and see that India also develops her scientific research in all aspects of life to keep pace with the researches elsewhere. India could be economically better and materially progressive and stabilised if things are scientifically planned and the activities systematically controlled so that we could be saved from the after-effects, dangers and bitter experiences produced by the Industrial Revolution in Europe from which humanity is suffering to-day, whether it is war or peace.

Unplanned towns and their growth without control give birth to slums. We cannot allow it to repeat itself which caused ill-health, consequent inefficiency, economic loss, strategic weakness, waste and confusion by excessive concentration of industries, towns and ports, in huddled humanity. Happiness of humanity is as important as efficiency in machine invention and its production. Humanity cannot be subjected to destruction to the extent mechanical inventions and operations force us to do.

The *official programme must therefore be* directed towards homes for the houseless and work for the workless and it is only by reference *to economic conditions that* the actual shortage can be eliminated, or the many obstacles to buildings be overcome. The *fundamental questions at the root of the* problem are, the relation of wages to rents, the supply of capital laws, the organisation of building, *labour and control of materials*, taxation and good technical control.

Elimination of lung spaces, house gardens, playing fields etc., by speculative builders who encroach upon open land, wherever possible, for building purposes, leading to overcrowding and congestion, and concentration of population created conditions detrimental to health and put obstacles to the best development of body and mind. These, if not prevented in time, cost us millions for remedying their consequences and if allowed to exist, breed a population of poor stamina, little energy and inability to support itself and lead to unnecessarily large expenditure on hospitals, sanatoria and other kinds of treatment. Good and healthy environment for the bringing up of the future race must be our aim for which we must strain unceasingly. If attempted under proper guidance and efficient control, we would succeed in the *creation of beautiful surroundings and dwellings* and afford the best conditions for the production of that energy which would contribute *towards the sum total of our achievements*, balanced adjustment and judgment.

Is Lead-Poison the Root Cause of Dental Caries?

DR S. K. GUPTA,

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TO-DAY our water supplies are apt to be contaminated by traces of lead dissolved by the water passing through lead pipes. Lead is a constituent of the solder used for sealing tinned foods. Lead enters largely into the amenities of modern life. Our walls are painted with lead paint. No satisfactory *substitute has been found for boiled linseed* oil—the diluent of ground colours—which is simply made by boiling litharge, a lead oxide, with linseed oil Lead enters into the composition of "crystal" glass. Alkalies in contact with this glass will dissolve out of the lead, but a poisonous solution of a plumbate will result.

Lead, like its fellow-elements, antimony, tin, zinc, arsenic, silver, barium, forms poisonous salts which act deleteriously on the human organism, and like arsenic, is a "cumulative" poison Like arsenic it can also be absorbed through the skin. Hence "painter's" colic, the poisoning to which lead-workers are subject, and hence also the blue lead line seen on the gums of those working among lead paints

Opening the Way to infection.—

There are only two solvents capable of dissolving teeth enamel, *viz*, metaphosphoric acid and lead compounds. This enamel *being destroyed the dentine is laid bare, and* is then open to all the infections of the mouth. Decay of the teeth results. The question, therefore, inevitably *arises in the mind* whether lead may or may not be the cause of this modern curse of civilisation—Dental Caries.

It may be that I am rushing in where "experts" fear to tread. My theory may be wrong, but "facts are chiels that winna ding." *When chemistry teaches that there* are only two solvents of teeth enamel, and when one of them, metaphosphoric acid, can be *ruled out, since its corrosive action* would destroy the soft tissues, as well as the osseous tissues, we are bound to ask whether lead is not the only possible mischievous alternative.

The common idea is that decaying food sets up germ compounds, which destroy the teeth. Is there any evidence, however, that decomposition acids will dissolve enamel without the presence of even a trace of lead ?

It is significant that our great grandparents who had good, sound teeth, even in old age, got their water supplies from spring or well, through iron pipes. And they never ate tinned food.

FORD ON FOOD

EVEN Henry Ford, whose opinion on any and every subject is listened to with such profound respect because he has superintended the making and selling of so many cheap automobiles, has recently delivered himself of a manifesto on the subject. Under the caption of 'Diet and Morals' the following editorial appeared in the *New York State Journal of Medicine*.

What the editor of the *New York State Journal of Medicine* says about health is seldom considered to be news, owing to quantity production, but what Henry Ford says about any phase of health attracts immediate notice, for a time. The *New York Times* contains a report in which Mr. Ford suggests that dieting should be taught by clergymen because of its effect on character and morals.

Turning to the interview, the following is an interesting quotation:

'For a long time now the clergy has been teaching people to be good. They cannot do this and disregard the habits of living. Health is a condition that affects everything. Instead of cluttering up religion with a lot of things that do not belong to it, why does not the clergy teach people how to eat? There are such great changes of mental attitude to be obtained by correct habits of diet that it would pay the clergy to attend to the commoner and more respectable habits, such as eating, than to some of the results of bad eating.

'Most wrong acts committed by men are the result of wrong mixtures in the stomach. Booze is not food, but people put it into their stomachs, and you know what frequently happens. Dope—wrong foods—wrong mixtures of good food—Crime, if that is what you want to call it, comes from wrong mixtures.'

'Granting that, Mr. Ford, how can ministers be expected to give intelligent discussions on food values? How can they know?

"They can learn. They can first find out for themselves by experiment. Religion always had a lot to say about eating—you have only to look into the Bible to see that. Ministers can learn, or if they don't want to learn, they can invite people who understand into the pulpits '

'You mean, instead of talking so much about religion, you would have ministers—or persons expert in the subject—discuss food values'?

'I did not say "instead of religion;" this is a part of religion. In fact, you cannot have a thorough-going complete religion without it. You may have a system of ideas, but not a complete system of life. And after all, the life is the religion '

'Then you think it could be taught?'

'Yes, and with great advantage First discover the vital connexion between food and attitudes of mind, between food and the engergies of mind and of body; then experience the benefits of a proper course.'

In the same interview article, Dr Royal S. Copeland, United States Senator from New York and former Health Commissioner of the City of New York, is said to have remarked, as he finished reading the Fordian remarks:

'Uniformed persons will smile at Mr. Ford's conclusions Doctors won't. Nor will persons who have had experience in the subject. There isn't any doubt but that we are what we are because of what we eat.

'I agree with Mr. Ford that the clergy can have no greater purpose than teaching people how to live. I agree with him when he says values in right living should be taught from the pulpits. It is a proved fact that an individual who is well-nourished will have functions which are normal. If his functions are normal, he is likely to think straight and likely to live straight.

'However, I do not believe Mr. Ford has gone far enough in the expression of the thought I am much more in favour in taking the subject of proper eating beyond the church and into the schools. For quite a number of years I have been tremendously interested in the subject of school lunches—and what goes into them. There is far more than mere feeding An informed person should tell the children why they are getting certain foods and certain balances. This should be done, not only for the purpose of educating the child but also for the purpose of educating the parents

'Is it possible for wardens of penal institutions to straighten out the lives of their prisoners by changing or improving food balances?

'It is not only possible—it is very probable. The fact that a child grows into maturity and into trouble with the laws because of malnutrition doesn't prevent that child, as a man, reorganizing his life through his intestinal tract.... .

'...Mr Ford, at sixty-five years of age, is in fine health. He is frugal in his eating. He has learned that his system required certain combinations that it may function properly. All men are not built alike. Some men may require more food; some may require less; but the vast majority of persons eat far more than they need—and most persons indulge in the wrong mixtures

'One proof of that is found in the crowded conditions of our jails, and our reformatories and prisons Speaking from a medical viewpoint, there is no doubt about it. I do not quite agree with the sweep of Mr. Ford's statement that, "Some day people will learn how to eat and there won't be any more hospitals." But it is so very close to the truth that I have no quarrel with it."

A few months after this interview, the honorary title of M. D. was conferred on Mr. Ford by the Interstate Medical Assembly.

—Extract from "Food and Character" by Louis Berman, M. D., (Mathuen & Co. Ltd., London):

POPULATION STUDIES IN INDIA

According to the census data, the population of India on March 1, 1941, was 388·8 million, an increase of 50·7 million, or of 15 per cent. since 1931, the largest increase in India's census history. "India," Population Index points out, "now has a population which is not much smaller than that of all Europe, outside of Russia. In the past decade its population increase alone amounted to more than the total population of the British Isles."

The growth of Indian population has been cyclic in character. From 1881 to 1891, a period of relative prosperity, the increase was 10 9 per cent.; in the 1891 to 1901 decade, the population increased by only 1·5 per cent. due largely to the great famines in 1899 and 1900. From 1901 to 1911, a period of general recovery, the population increased by 6·5 per cent., while from 1911 to 1921 the increase was again very small, only 1·2 per cent. owing to the death of at least 13,000,000 people from the influenza epidemic and to the generally higher mortality of the war and immediate post-war period.

From 1921 to 1931 the rate of the increase once more went up to 10·6 per cent. and, during the decade of 1931 to 1941, in spite of the expected decline and of the world depression, the Indian population increased by 15.2 per cent., a more rapid growth than ever before.

The largest rates of growth occurred in the Northwest Frontier Province, the Punjab, and the Punjab States Agency in the North West, in Travancore in the South, and Bengal and Assam in the East. There was a larger urban than rural growth, the rate of increase in cities of over 100,000 being much higher than for all India, and the number of cities, too, increased appreciably. Population growth was most rapid, in the main, in the areas in which the Mohammedans are most heavily represented. "A partial explanation," says the Index, "lies in the fact that the Mohammedans are heavily concentrated in the well-watered areas and in those in which migration projects are yielding an expanding water supply."

Reference is made to an analysis of the Indian population in the half century from 1881 to 1931 by Arthur Geddes in the Geographical Journal for November, 1941 In this article Geddes distinguished between two types of areas: the chronically stagnating which include about 100 million people and in which chronic deficiencies and endemic diseases result in low rates of population increase; and the fluctuating areas, where decades of prosperity, good health and rapid increase alternate with devastating periods of famine and disease. The chronically stagnating areas are in the main those where there is an ample and dependable water supply with a high population density which has already forced living levels to the minimum of subsistence. The areas with fluctuating populations are those with undependable water supplies where years of draught kill off the increase of favourable times. These divisions represent "areas of absolute and relatively permanent Malthusian pressure, and areas with more dramatic but perhaps less serious problems of catastrophic decrease alternating with rapid increase."

The populations in the various Provinces and States of India, together with the number and percentage of the literate populations, are given in a special table. Of the total Indian population in 1941, only 12·2 per cent. were literate. The percentage of literacy ranged from 47 7 per cent. in Travancore State to 0·8 per cent in North-west Frontier Province.

Another table gives the distribution of India's population in 1931, according to the five main religious groups The percentages in all of India were as follows: Hindu, 68·24; Mohammedan, 22.16, Buddhist, 3.65; Christian, 1 79; and Sikh, 1·24.

In some Provinces and States the Hindus represented 85 per cent. or more of the population, and in others the Mohammedan constituted the majority In the Province of Burma, 84·3 per cent. of the residents were Buddhist, while in the Madras States 29 per cent. were Christians, the highest percentage of Christians in any of the Indian sections.

Additional information about the vital statistics of India is available from the general statistical data published in the same issue of Population Index. The following table, based upon this material, gives the birth, death and infant mortality rates for India, as well as the expectation of life at birth in that country. For comparative purposes, similar statistics are given for England and Wales, and for the United States during the same years

Rates.	India (British Provinces)	England and Wales	United States	
Birth rate (1939)	33.0	14.9	17.32	
Death rate (1939)	21.8	12.1	10.6	
Infant mortality rate 1936—1940	164	55	51	
			White	Non White
Expectation of life*				
Males	26.91	60.8	60 6	49.2
Females	26 56	64 0	64.6	52.1

* These figures are for India as of 1931, for England and Wales as of 1937, and for the United States for the period of 1930-1939.

India, which today has the largest population in the world, also has the lowest expectation of life. It has a high birth rate, almost double that of England and the United States, but its death rate is also double, and its infant mortality rate is three times as high. Vital statistics of India clearly reflect its poverty and the pressure of the density of its population.—*Indian Journal of Venereal Diseases and Dermatology*.

How to Protect Yourself Against War Gas?

THE Office of Civilian Defence, Washington, D. C., issued on May 15 Operations Letter No. 128, which supersedes Operations Letter No. 46 concerning protection against war gas.

1. Stay indoors. A tightly closed room affords protection against war gas. All windows and doors should be tightly shut and blankets (to be soaked with water) or cardboard should be kept in readiness to cover and seal shattered windows. Choose a room on an upper floor, if possible; most war gases are heavier than air, although they may be carried up with air currents.

2. If caught outdoors in a gas attack, get out of the area at once. Look down and shield your eyes with your arm. Do not worry about any brief vapour exposure to which you may be subjected. The danger from this source is not great.

3. Prompt action will avoid serious effects. If you know or suspect that you have got any of the gas on your person or clothing, do not go hunting for a casualty station or gas-cleansing station and expect some one else to help you. Knock on the first door you come to, and take whatever steps are necessary. Self aid is the quickest and safest way.

4. This is what you should do. This routine should be memorized so that it will be done automatically in an emergency:

(*a*) Remove shoes and outer clothing and drop them outside the house, in a covered can if available. Do not touch this clothing again except with sticks or gas-proof gloves. Do not cling to false modesty. To enter a house with contaminated clothing endangers everyone in it.

(*b*) Get to a bath room, kitchen or laundry room as fast as possible.

(*c*) If your eyes have been exposed to liquid gas or spray, flush them immediately. Plain water out of a faucet, shower head, canteen or douche bag will do; but a lukewarm dilute solution of sodium bicarbonate (heaping tablespoon in a quart of water) is even better, if it is handy. Let any one nearby help you.

(*d*) If drops of liquid blister gas have splashed the skin, you can prevent serious burns by adequate cleansing. Promptly blot up the liquid with pieces of cleansing tissue, cloth or a handkerchief, which should be disposed carefully in order that it cannot contaminate any one else Then sponge the skin briskly with laundry bleach containing Sodium Hypochlorite, if it is at hand, and rinse off under the shower or in a tub. A thorough bath with a vigorous lathering is the final step, which should never be omitted. Dry the skin by patting Do not rub. Dress in whatever clean clothing you can get If blisters develop, you should seek medical advice.

(*e*) If your nose and throat feel irritated, snuff and gargle with a dilute solution of Sodium Bicarbonate. If your chest feels heavy and oppressed, if you have any trouble in breathing or if smoking becomes distasteful, lie down immediately and stay perfectly still until you can be taken to a doctor. Do this even if you feel fine otherwise.

5. Remember: Cleanse yourself quickly and calmly. Follow the instructions of your air raid warden.—*Journal of the American Medical Association*.

WHAT DOES THE "HEALTH" STAND FOR?

The "Health" stands for

Health and makes the nation healthy.

Education and educates the people on the value of health.

Activity and keeps the nation active.

Learning and infuses joy into life.

Tact and does the right thing at the right time and in the right way.

Habits and builds up healthy habits of life.

D. Krishnayya

The Role of the Hospital in Civilian Defence

WALLACE D. HUNT, M.D.,
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MODERN warfare as introduced by the axis powers has produced certain expressions which have been used so much as to seem nothing but banal platitudes. Such terms as "total war" and "blitzkrieg" are often heard now, yet they were unknown in previous wars. Obviously, modern warfare has introduced some new techniques and requires radical changes in our conception of warfare.

Total war means exactly what it implies. Nations now go to war with every means at their command. No longer do the armed forces alone carry on the war; every man, woman and child is involved in some way. Civilian casualties are frequently greater over a period of time than those of the armed forces. Disruption of the activities of the civilian population may serve the enemy as effectively as overcoming army or navy units. War casualties often become as serious a problem to the hospitals at home as they are to the hospitals in the field of battle. Epidemics at home may well be as serious a handicap to the prosecution of the war as epidemics in the armed forces.

The "blitzkrieg" or lightning war means that like lightning it may strike anywhere with sudden fury. The element of surprise is paramount here, unleashing an attack with lightning rapidity where least expected. Finding a community unprepared, it is easy to play havoc on its industries and its people. Incendiary bombs start blazing infernos which spread rapidly, bringing death and destruction all out of proportion to the actual bomb load employed.

In the early days of the blitzkrieg on Great Britain the casualties were high, the damage extensive. If the armed forces were relatively unprepared how much less so was the civilian population. Out of the chaos there gradually developed a system of civilian defence, a plan of action based on organization, training and discipline. Military strategy is a science of long-standing but now there developed a new science of warfare—civilian defence.

At first there was a tendency to regard bombings in the cities as disasters which could be handled as any other disaster. This proved inefficient and impractical. Under war conditions, with widespread bombing, it is often impossible to obtain aid from neighbouring communities. All too often they were also hard hit. There is not time to leisurely salvage remains when the enemy may return again and again. It became evident that so far as possible each community must be self-sufficient. Peacetime disaster relief methods would not suffice.

The medical care of civilian casualties became the duty of the medical division of civilian defence. Organizing the medical resources of the community gave rise to the development of what became known as Emergency Medical Services. Experience soon demonstrated that the only practical plan was to base the medical units in the hospitals. In other words, the hospital is the very cornerstone on which the emergency medical services rest.

This represents a distinct departure from the usual peacetime disaster relief organization. The older system of putting medical teams into the field, totally unrelated to hospitals, is not feasible. The hospital staff with its nurses and other trained personnel represents the only logical system. These people are accustomed to working together, and the staff represents a balanced organization. It is important, too, that certain personnel be designated to remain at the hospital to care for incoming casualties. The tendency to strip the hospital of its staff in an emergency must be guarded against Surgeons and others with special training may be of comparatively little value in the field but are of inestimable value in the hospital. Less skilled persons may serve as well in the first aid posts.

The hospital is also the logical place to obtain supplies There should always be on hand an ample quantity of equipment and medical supplies. It is not intended they should have vast stores of unused material but rather a sufficient stock on hand to handle any emergency. Contrast this again with the unrelated first aid posts that must of necessity have a store of supplies which may never be used. Multiply this many times and it becomes obvious there must result a serious shortage of such equipment and supplies.

The cost of hospitalizing persons injured as a result of enemy action will be borne by the federal government. A sum of money has already been set aside for this purpose. It is also proposed to reimburse at least in kind, for supplies used in caring for the casualties. Rates to be paid for hospitalized patients have been established. The regional medical officers for civilian defence are at present setting up the administrative machinery.

Publications of the Medical Division of the Office of Civilian Defence have outlined the approved method for organizing the hospital staff into field units. They have also indicated the equipment and supplies which will be found suitable for first aid posts and casualty stations. It should be emphasized here that casualty stations are to serve as hospital sub-stations, located in suitable buildings in areas which may be remote from the hospital and not otherwise adequately served. They may act as filtering stations to prevent overloading the hospital with nonserious cases.

In certain vulnerable target areas it may be necessary to evacuate the hospitals at any time. This may be a partial or total evacuation. It may well be necessary to remove chronic cases from receiving hospitals to make room for the reception of casualties. On the other hand, the more protected hospitals may be called upon to receive patients from evacuated hospitals. This means there must necessarily be a closer relationship between the hospitals, in some cases what amounts to an affiliation. Hospital administrators have a serious responsibility in planning now for any eventuality.

The programme of the military in taking over the entire output of blood plasma from the commercial laboratories brings about the problem of securing sufficient quantities for the civilian needs. It will be necessary that all the larger hospitals, equipped with adequate laboratories, plan to establish a blood bank if they have not already done so. These hospitals having blood banks will need to expend their facilities to be prepared for any sudden demand either from their own or nearby communities. Recognizing this need the federal government, through the medical division of the office of civilian defence, is prepared to offer consultation and advice to those hospitals considered as most likely to have demands made upon them.

The programme for the development of extensive blood banks in the hospitals is more than a plan to meet emergencies. Blood transfusion is not a new procedure although many of the refinements of technique are recent developments In the past, however, the blood transfusion was a tedious, expensive procedure, consequently, too often used only in extreme emergencies. With the proper collection, preparation and storage of blood or plasma it becomes a relatively simple and inexpensive treatment and need not be reserved for patients in extremes The remarkably gratifying results obtained at Pearl Harbour were due in a large measure to the prompt and repeated blood plasma treatments administered to the casualties This indicates that blood transfusions, either of whole blood or plasma, will become a more standard procedure in all hospitals. They must be encouraged to be prepared for it.

Practically every hospital has suffered the loss of staff members to the armed forces. It is quite certain there will be further losses. In spite of the hardships this works upon the hospitals, there is not one that is not proud its staff members are serving their country. More sacrifices will be made and made cheerfully to insure sufficient medical personnel for our army and navy. Necessarily, this will impose added responsibilities to those who remain at home. In addition to the increased load of caring for the sick there will be need for preparing for emergency medical services in these days of total war

Not alone in medical staff personnel are the hospitals being depleted. Nurses, too, are being called into the services until hospitals are finding it more and more difficult to replace them. Foreseeing the inevitable shortage of nurses and profiting by the experience of England there have been established in many hospitals under the direction of the Red Cross, classes for the training of nurses' aides. This programme has been explained to you and yet certain misconceptions occur. It cannot be overemphasized that this is not a programme designed to produce practical nurses. Wherever the programme has been instituted, reluctant hospital directors and nurses have found themselves enthusiastic before the first class is completed. These people are not being trained in a vocation but are women of independent income volunteering to aid in the hospitals without pay Trained to work only under the direction of graduate nurses they increase the nurse's efficiency by doing certain routine tasks requiring no professional training. The hospitals have not yet explored the possibilities in this field.

Another advantage to the hospital gained by training nurses' aides lies in the field of public relations. Intelligent lay women from your community have an opportunity to learn at first hand what is meant by high standards of medical care, what safeguards the modern hospital provides for its patients. These women can and do carry the message to their friends which the professions themselves are too modest to boast about.

When the bombs fall on certain vulnerable target areas it is quite likely calls will come for medical aid to hospitals not at the moment involved. With this in mind it is proposed that a working group, to be used in such an emergency, be organized to move as a unit to the stricken areas. Here again a plan is proposed that, under civilian defence, civilian doctors be organized much on the lines of any army base hospital, although much smaller. Such a unit could move on short notice to bring temporary aid wherever necessary. It is not planned they would need to go far from their home area, nor would they be called for extended service At the same time the need for organization now is obvious Provisions are being made for these physicians to go when and if needed with apropriate officers' rank, salary and travelling expenses.

These are indeed trying times for hospitals and the medical profession Let it never be said that we shirked our responsibility. There is a very important job to be done and it will be done It is not all blood, sweat and tears. Out of it already there has developed a closer understanding, a closer feeling that we are all for one and one for all No longer can we indulge in the luxury of personal feuds, standing on our prerogatives and other such nonessentials. The luxuries, superfluities and fol de rol will be abolished. The principles and high standards need not be threatened. A return to the primary principles of medical care—unembellished though they be, cannot be anything but a blessing.

In the meantime rest assured, the hospital and medical affairs in the federal government rest in the hands of responsible people from your own ranks. Our duty is first to win the war; we do not feel it necessary to sacrifice our ideals or standards but rather that because of our ideals success is inevitable.
—*Minnesota Medicine.*

Topics from Medical and Health Periodicals

Vitamin B Complex

1. Diets deficient in vitamin B complex in trained subjects decrease work output.

2. Early mild states of malnutrition, with no objective evidence of deficiency disease, do prevent maximal work efficiency.

3. Diets with about one third (0 65 mg of thiamine and 0 94 mg. of riboflavin) of the vitamin B complex of the recommended daily requirement do produce subjective symptoms of easy fatigue, irritability, lack of pep, anorexia and increased leg pain during work periods, in spite of the fact that no objective evidence of deficiency disease is present.

4. The ratio of blood pyruvic acid to the total work output increases proportionately as diet deficiency progresses.

5. Subjective symptoms of fatigue, irritability, lack of pep, anorexia and leg pains all disappeared and work output returned to normal or better within a few days following the supplementation of vitamin B complex.

6. Vitamin B complex supplementation added to a vitamin B complex inadequate diet restores work output to efficient levels.—*J.A.M.A.*

Left Handedness

THE parents should encourage the child to use the right hand in eating, since this is the only situation that occasions social embarrassment. Ill effects may follow if a predominantly left-handed child is forced to use the right hand. The development of finer coordinations in general tends to be interfered with.—*J.A.M.A.*

New Method of Making Sea Water Drinkable

A SIMPLE method of making sea water safe to drink has been perfected at the Naval Medical Research Institute, Bethesda, Md. The method, which appears to be more practical than any other yet devised, except distillation, is intended primarily for use on rubber life rafts carried on air craft. The equipment consists of two chemical compounds and four plastic bags each having a capacity of slightly more than a quart The survivor dissolves one of the chemical compounds in sea water contained in one of the bags, then pours the mixture into another bag that contains a filter sac. The product is emptied into the third bag and the first step is repeated except that the second chemical is used. After the chemical has acted, the water is filtered in the fourth bag. Two of the four steps are eliminated if only two of the bags are used In this case one container serves for dispersion and filtration of each chemical compound. By the new method of desalination, a survivor who started out with ten of the chemical packets in the necessary bags would be assured of a twenty day supply of drinking water. If there were five persons in the life boat, the supply would be enough for four days.

The composition and design of the bags are the result of several months of experimentation at the Naval Medical Research Institute. The process of removing sodium salts from sea water was discovered by Lieut. (jg) Claire R. SPEALMAN, hospital volunteer specialist, and further developed by Lieut WILLIAM V. Consolazio, hospital Volunteer specialist, chief chemist of the Naval Medical Research Institute, and other members of the staff. Research was carried out under the direction of Capt. WILLIAM L. MANN, M C., medical officer in command of the Naval Medical Institute, and Dr A. C. IVY, scientific director of the institute, and the new method was announced by Rear Admiral Ross T. McINTIRE, Surgeon General of the Navy. —*J.A.M.A.*

Infantile Paralysis

THE line of treatment which has given best results in long standing cases is underwater movements. Hot spring pools are most useful. Large full bath tubs may be used as substitute. Under water it is possible to execute movements quite impossible outside the water. Fomentations to spine and hot packs followed by massage and voluntary efforts to gradually move the muscles, are also helpful All of this requires persistence over a period of years; there is no quick return to normal. Drug medicines are of little use. Fomentations, packs, baths under water movements, massage, and bringing the will to bear on groups of muscles, these are the measures of value. Make certain the patient is receiving full supply of all vitamins and food minerals. These are the medicines nature requires for reconstruction.—*The Oriental Watchman.*

Heredity as an Etiologic Factor in Chronic Alcoholism

1. Alcoholism is four times as frequent in the family history of the excessive drinker as in the normal drinker. This indicates that there is a specific inheritance of the disease in many cases.

2. The inheritance is that of an abnormal reaction to alcohol in that the effects of the drug are more attractive and less obnoxious than in the normal drinker.

3. The susceptibility to alcohol is often constitutional and akin to an allergy to a food or an idiosyncrasy to a drug.

4. There is a nonspecific relationship between the inheritance of psychopathy and alcoholism.

5. Total abstinence often is an equivalent of alcoholism in that the individual instinctively avoids a substance to which he would have an abnormal reaction.

6. The inheritance is usually through the father or the mother's male relatives. This is probably due to the restraining effect of psycho-social opposition to alcoholism in women rather than any sex-linked inheritances

7. We believe that treatment directed specifically toward depriving the excessive drinker of the abnormal pleasure in alcohol is logical and full of therapeutic possibilities. —*Northwest Medicine.*

Alcohol Deadly Enemy of Health in Tropics

MANY American soldiers are now stationed in the tropics and the number will be greatly increased before the war ends. This environment brings a host of dangers to health. Fortunately Army and Navy Medical Service has been enormously improved, but can function at its best only with the complete cooperation of the men themselves. Lieutenant Commander J. L. McCartney, M.D., in *War Medicine*, gives a comprehensive picture of the effects of life in hot countries on the nerves and mind. Soldiers, missionaries and businessmen stationed in the tropics have customarily been granted vacations in the homeland every one, two, or three years as a health measure. It is recognised that the temptation to strong drink and immorality is particularly strong among men exiled to equatorial regions. Two English authorities, Rogers and Megaw, declare that alcoholic excess is responsible for more disability among Europeans in the tropics than any of the tropical diseases. Delirium tremens is more common than in temperate climates. Syphilis seems to be the rule rather than the exception. The best protection of the young soldiers is sound moral instruction. Unfortunately, there has not been in the army camps in this country sufficient zeal to keep temptation away. It should be recognised that unnecessary sickness aids the enemy as effectively as do his bullets.—*Good Health.*

New "Bombs" Protect Soldiers Against Disease

AMERICA'S fighting men in tropical jungles are now armed against malaria and yellow fever with a new "health bomb" that exterminates disease-carrying insects. The new weapon is an insecticide dispenser that discharges a mist fatal to disease-spreading flies and mosquitoes but harmless to humans. The six inch metal dispensers, each about the size of a tin can are called "bombs" by workmen who make them at the rate of thousands a day in an eastern Westinghouse plant.

With the dispenser the Army hopes to reduce sharply the casualty rate of past wars, in which disease incapacitated as many as did bullets. The "health bombs" will be discharged frequently in tents and barracks wherever troops are stationed in the tropics, and in the cabin of every airplane, military and civilian, that takes off from a tropical base.

Developed by Young Chemist. Each dispenser is loaded with one pound of liquid insecticide developed by Dr. Lyle D. GOODHUE a young Department of Agriculture chemist. The insecticide is released as a fine mist that remains suspended in space. In the 12 to 14 minutes required for complete discharge, one dispenser will fumigate 150,000 cubic feet of space, the equivalent of 240 Army pup tents, or 50 giant bombers. But the spray can be turned on and off as necessary. For example, only three seconds are required to fumigate one pup tent.—*Northwest Medicine.*

Can't a Guy Have Privacy

A DISPUTE in Commons over whether modest soldiers must strip for inspection by women doctors ended in cheers today when a government spokesman announced a new rule of privacy whereby troops would be given the right of inspection by their own sex only—if they specifically require it.

Maj. Arthur Henderson, financial secretary of the war office, terminated debate by announcing that wherever possible, such periodical examinations "must be carried out so as to produce, so far as is possible, the atmosphere of a clinic rather than of a parade."

Capt. F. J. Bellenger, Laborite, raised the issue. He cited the case of a 40-year-old non-commissioned officer, who is the father of grownup children. Bellenger said that the noncom was lined up for inspection and was amazed to find a 24-year-old woman doctor waiting to examine him The M. P. quoted from the soldier's letter of protest :

"I stripped to the waist but when she requested me to drop my trousers, I was so embarrassed I just couldn't do it."—*Picked by C. L. H. from the Ohio State Journal.*

Appropriate

THE very coloured patient had just returned from the maternity ward of Parkview Hospital in Dallas.

"What am de name of yo' chile, Sister Abernathy?" asked a neighbour.

"Ah gives him a Bible name. Ah calls him 'Death'."

"Whut do yo' mean, Bible name?"

"Ain't yo' heard whut de Bible say—'De wages ob sin am death'?" —*Texas State Journal of Medicine*

Learn to Relax

It's foolish fighting phantoms,
With bitter cries and fear,
For when we learn to live with them,
They almost disappear.

—*Texas State Journal of Medicine.*